

(No Model.)

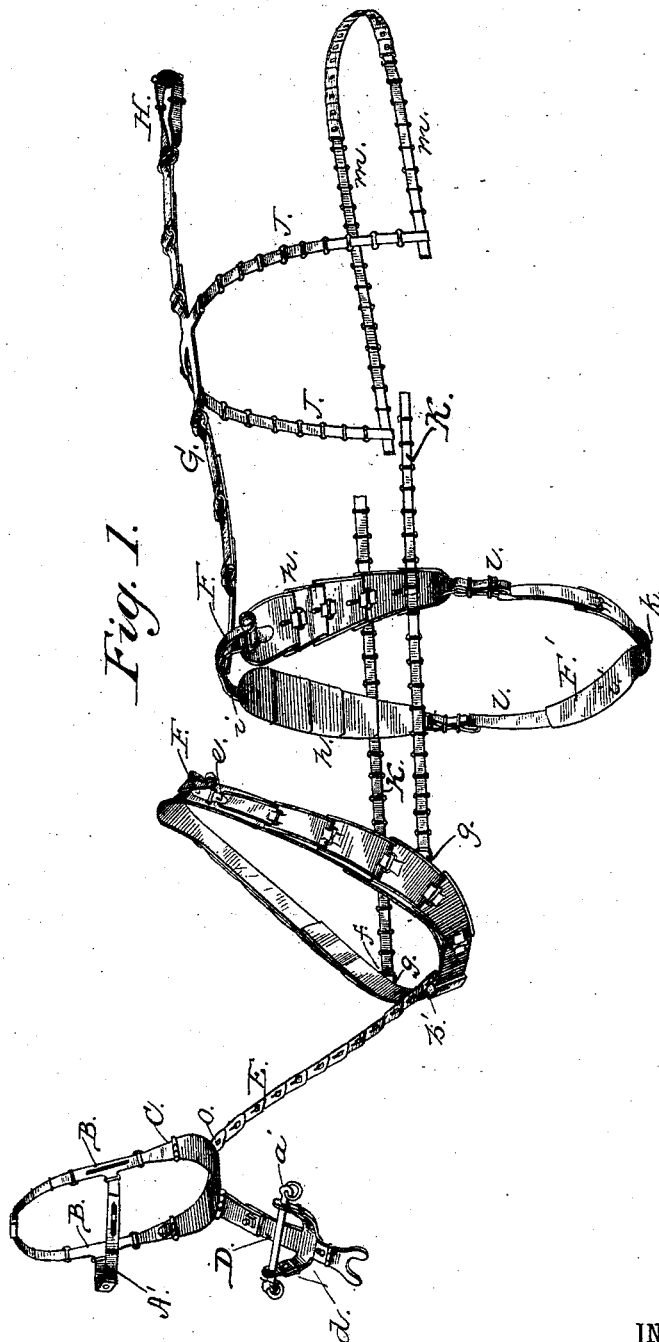
2 Sheets—Sheet 1.

A. W. TOURGEE & L. DE F. JENNINGS.

HARNESS.

No. 347,210.

Patented Aug. 10, 1886.



WITNESSES:

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INVENTORS:

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ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

A. W. TOURGEE & L. DE F. JENNINGS.

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Fig. 2.

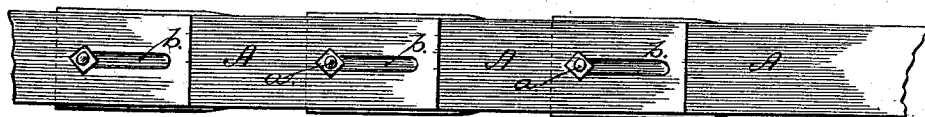


Fig. 3.

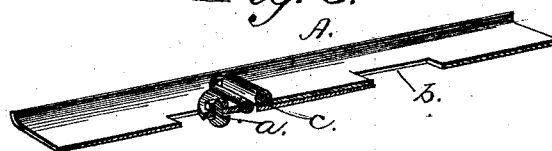


Fig. 4.

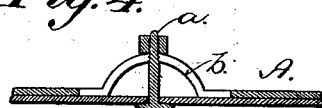
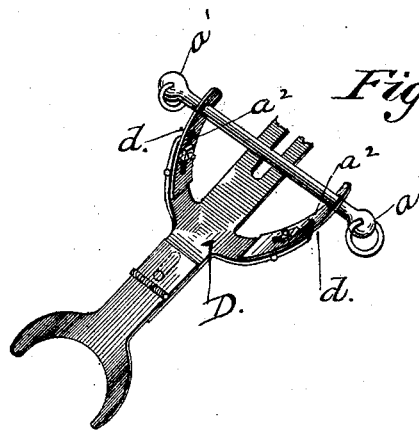


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALBION W. TOURGEE AND LINSON DE F. JENNINGS, OF MAYVILLE, N. Y.

HARNESS.

SPECIFICATION forming part of Letters Patent No. 347,210, dated August 10, 1886.

Application filed November 23, 1885. Serial No. 123,653. (No model.)

To all whom it may concern:

Be it known that we, ALBION W. TOURGEE and LINSON DE F. JENNINGS, citizens of the United States, residing at Mayville, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Harness; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

Our present invention has for its object to provide an improved, novel, and simplified construction of harness in which metal is substituted for leather in all the several parts of the same, with the exception of the reins or lines, and said parts being of novel and peculiar shape, and adjustable with relation to each other to promote ease of adjustment, and secure greater strength, smoothness, and durability; and our improvement consists, essentially, of the details of construction and general arrangement of parts, all as will be hereinafter fully described, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 represents a perspective view of our invention, and Figs. 2 to 5 enlarged detail views thereof.

Similar letters of reference occurring on the several figures indicate corresponding parts.

In carrying out our improvements we substitute for the leather parts and straps of the ordinary harness a series of overlapping metallic plates of different lengths and widths, according to the particular use to which each is to be applied, said plates being made of parallelograms of any suitable light sheet metal, but preferably of sheet-steel, turned up at each side, and either hinged or adjustably riveted together, the hinge being used where no adjustability is required, and the rivet in one part, operating in connection with a slot in a corresponding part, being used where it may be deemed necessary or desirable to lengthen or shorten the construction.

Referring to the drawings, A represents the metallic plates having the sides thereof turned

up or rounded so as to present a smooth bearing-surface, and provided near one end with an upwardly-projecting rivet or bolt, *a*, and near the opposite end with an elongated slot, *b*, as shown. The rivet or bolt of one plate is adapted to project through the slot in the next succeeding plate, and so on in consecutive sequence, according to the length desired, and the rivet headed down, or a nut screwed upon the threaded bolt to join the parts together in such manner as to permit of the ready extension or contraction of the parts. The ends of the plates A may, however, be curved or rounded over a narrow link, *c*, which serves to secure the plates together, and at the same time acts as a hinge for the free movement of the same. It may also be observed that the edges of the slotted portion *b* of the plates may be slightly raised, as shown in Fig. 4, so as to tighten the hold or purchase of the nut or riveted head of the bolt or rivet *a*.

The bridle constituting a part of this harness is of peculiar form, and is constructed in the following manner: A line of the hinged or hinged and slotted plates interspersed extends from the bridle, at the part marked *o*, down to the collar *b'*, said plates being so united as to form a continuous spring, which exerts its strength in such direction as to press the head of the animal away from his breast, the effect of the whole line serving to keep the horse's head in any desired position, since by the adjustment of the parts the spring may be made weak or strong, or set for any point in the line of movement which his head may take. The plates in this construction should be so shaped as to snugly fit the part or parts to which they are to be applied, those from the points *a'* to *o* being curved inwardly and almost entirely hidden between the inferior parts of the lower jaw of the animal, while the plates along the neck from the point *o* to *b'* are curved outwardly, so as to fit the contour of the neck. The brow-piece A' of the bridle is formed of two parts or sections hinged to the neck-pieces B, one on each side, and united together at the front by an ordinary snap-lock, the overlapping ends of the united plates forming said brow band or piece A' being so arranged as to partake of the nature of an outwardly-acting spring. The neck-pieces B are also formed of a series of the overlapping metallic plates

already described, and are attached by hinges to the throat-piece C on each side, the lower piece extending beyond the hinge on the upper side of the throat-piece, and by being pressed against it constitutes an outwardly-acting spring for holding the neck-pieces in place. A suitable snap-lock unites the neck-pieces B upon the top of the neck of the animal, while the brow band or piece A' is connected to said neck-pieces, as already above described. The throat-piece C of the bridle is formed of a metallic plate, convex on its upper surface and concave beneath, and of a width corresponding to that of the horse's jaw at its articulation with the neck. It is hinged on each side to the neck-pieces B, and at its front similarly connected to the chin-piece D, while at its rear it is similarly connected to the cheek-piece E. The chin-piece D of the bridle is composed of an extensible steel strap, made of two or more pieces of the general character already specified, of a greater width, and curved upward and outward at the lower end, so as to fit the form of the horse's chin, and is attached to the mouth-piece *d* on each side, as shown. The lower end of the chin-piece D is forked or bifurcated, having the edges rounded and turned upward, so as to rest against and clasp the chin of the horse, while above the mouth-piece *d* it is made of narrower pieces, overlapping and adjustable and curved inwardly, so as to easily fit the hollow under the horse's jaw, from which point it is gradually widened as it approaches the upper end, where it engages by means of a strap-hinge with the throat-piece C. The mouth-piece *d* is composed of two curved plates, one on each side, and provided at their upper-ends with a suitable opening for the reception of the ends of a bit of ordinary construction. Each of these plates are connected to a lower plate, formed solid with the chin-piece D—one on each side—preferably by a bolt with set-screw operating in the slots *a'*. At the point of connection with the chin-piece D of the bifurcated or forked end an elongated slot is provided in one part and a bolt and set-screw in the opposite part, by means of which the chin-piece can be abbreviated or extended. By loosening the piece the bit can readily be removed from the horse's mouth, and by extending it so as to rest closely against the chin the bit is held in place and the bridle rendered impossible of removal. The cheek-piece E is of the same general formation as the other parts, the overlapping ends of the pieces of which it is composed being so arranged as to constitute an inwardly-acting spring. The cheek-piece E extends from the throat-piece C to the inner portion of the collar, along the under side of the horse's neck, as fully shown in the drawings.

The collar forming a portion of our improved harness is of the same general shape and character as the metallic collars for which separate applications for Letters Patent have heretofore been made by A. W. Tourgee, ex-

cept that the side pieces composing the collar, instead of being made of one piece, are made of several overlapping pieces of sheet metal—preferably sheet-steel—struck into the proper form and united by hinged attachments and slotted, so as to permit of ready adjustment. It differs also from the former inventions above referred to in the fact that the side wings or pieces are attached to the cap or pad at the top, not by rivets, but by a circular strap-hinge, *e*, constituting an automatic adjustment and permitting a swinging motion back and forth to the side pieces. It differs still further in the fact that the cap or pad at the top of the collar in the former inventions is extended downward along the collar to the point of the shoulder. In the present invention this pad or cap is made of some pliable sheet metal—preferably galvanized iron or zinc—strengthened at the top by an overlying sheet of steel, which carries the circular wire stirrup to which is hinged the side pieces of the collar, the wire being turned in under the edges of the pad or neck-piece. The sides of this pad extending downward along the shoulder are readily fitted to its shape, and, as they are not moved by any action of the collar, constitute a washer of smooth soft metal intervening between the traction force applied through the collar and the shoulder of the draft animal. By means of this improved construction bruising, galling, or abrasion of the shoulders are avoided. The lower part of this inner portion of the collar may also be hinged to the stronger part, forming the pad diagonally, so as to permit of its being opened during the operation of putting on or taking off the collar, and without permitting any lateral motion or in any manner interfering with its functions as a washer or guard for the shoulders. The rear edge of the collar on its outer portion is also rolled over for such distance as may be necessary, so as to allow of the free operation of the hame which it incloses. This hame may be formed of a series of overlapping plates, but preferably is a solid piece of metal convex on the outer surface, so as to fit the curve of the collar, and having a thread cut in it to receive the trace-loop *f*, which has a screw of corresponding size. This curved part of the collar is perforated at intervals, so as to permit of the easy adjustment of the traction point to suit the need of different animals and other circumstances. The trace-loop *f* is composed simply of a bolt having one end threaded to screw into the hame, and provided at the opposite end with a perpendicular slot, *g*, for the reception of the trace, herein after to be described. The rein-rings F are formed of a metallic spring secured at its center to the top of the cap of the collar, and having its outer ends curved up, as shown, for the reception of the reins. The same principle applies also to rein-supports on the pad or harness-saddle.

The harness-saddle forming a part of our improved harness is formed of two flat me-

tallic wings, *h*, hinged to a connecting plate or strap, *i*, carrying, if desired, a terret. These wings *h* are composed of one or more pieces of sheet metal slightly turned up at the edges, or the edges turned over on themselves, and having countersunk depressions on the under side for the attachment of rein-rings and connecting devices. When made in separate parts, these wings are constructed in the same manner as the rest of the harness, of hinged and slotted sections, the overlapping ends making a continuous outward-acting spring. The rein rings or supports are preferably of the character already described, composed of a spring secured at its center to the connecting plate or strap of the saddle, and having its outer ends curved up or bent into the form of a ring, as shown in the drawings.

The girth *F'*, attached to the harness-saddle, is composed of a metallic center piece, *i'*, adapted to the shape of the horse along the sternum and fitted with suitable loops and adjustments. The central loop, *k*, in front is for the attachment of the martingale. To this is attached on each side a strap composed of adjustable plates, the overlap of which constitutes an outwardly-acting spring.

The ends of the wing-plates of the harness-saddle and the ends of the center-piece, *i'*, are connected by straps *l*, fastened to the latter by a thimble—one on each side—and working through a loop in the ends of the former. The back-strap *G* is composed of a simple line of links of the character designated, part of which are slotted to permit of ready adjustment, and extending from the crupper to the saddle, or, if desired, extending forward to the collar. The crupper *H* is composed of links shaped like the surface of an ordinary crupper, the inner edges overlapping and forming an outward-acting spring, the whole fastening by a suitable catch upon either side of the extremity of the back-strap. The side straps, *J*, are composed of sections of the links already described, hinged to the back-strap and to the breeching, some of said links being preferably adjustable. The breeching is made in the same manner as the rest of the harness, except that the back part is composed of a flattened

metallic tube of sufficient width to receive the metallic straps *m*, composing the sides, which are preferably held in place by set-screws or other suitable devices for permitting the extension of the breeching, so as to fit a large or a small animal. The traces *K* are formed of the overlapping plates or hinged flat links, as may be deemed most preferable, and are provided with suitable attaching devices for connecting with the collar and single-trees.

Having thus described our invention, what we claim as new and useful is—

1. The herein-described harness, composed of the bridle formed of the brow-band *A'*, side straps, *B*, throat-piece *C*, mouth-piece *D*, and check-piece *E*, the collar and harness-saddle formed as described, and the back-strap *G*, crupper *H*, side straps, *J*, and breeching, the several parts being formed of a series of metallic plates, substantially as set forth.

2. In a harness constructed as described, the bridle composed of the brow-band *A'*, side straps, *B*, throat-piece *C*, mouth-piece *D*, and check-piece *E*, the several parts being formed of a series of overlapping metallic plates or sections connected together substantially in the manner as and for the purpose specified.

3. In a harness, the back-strap *G*, side straps, *J*, breeching *m*, and traces *K*, formed of a series of metallic plates or sections connected together to secure an adjustability of the several parts, substantially as specified.

4. In a harness, the breeching *m*, formed of a series of metallic plates or sections adjustably connected to a flattened metallic tube, substantially as shown, and for the purpose specified.

5. In a harness, the girth *F'*, having a metallic center piece, *i'*, provided with a central loop, *k*, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBION W. TOURGEE.
LINSON DE F. JENNINGS.

Witnesses:

S. M. JENNINGS,
S. E. KILBOURNE.